During N-linked glycosylation of proteins, oligosaccharide chains are assembled on the carrier molecule dolichyl pyrophosphate in the following order: 2 molecules of N-acetylglucosamine, 9 molecules of mannose, and 3 molecules of glucose. These 14-residue oligosaccharide cores are then transferred to asparagine residues on nascent polypeptide chains in the endoplasmic reticulum. As proteins progress through the Golgi apparatus, the oligosaccharide cores are modified by trimming and extension to generate a diverse array of glycosylated proteins.ALG11 encodes an alpha 1,2 mannosyltransferase that catalyzes two sequential steps in oligosaccharide-lipid intermediate assembly: the addition of the fourth and fifth mannose residues to growing lipid-linked oligosaccharideson the cytosolic side of the ER. Afterwards, Rft1p flips the LLO into the ER lumen, where it is extended further. Truncated alg11-1 LLO's with three or four mannose residues are flipped into the ER and partially extended, leading to the accumulation of LLO's with seven mannose residues. ALG11 is needed for normal growth at 25&deg C and is essential at 37&deg C. Alg11p and its closest homolog, Alg2p, each form complexes with Alg1p, but not with each other. ALG11 restores function to S. pombe mutants lacking the ALG11 homolog gmd3.